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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/658,796

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Kyung-Ui Park

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06/13/2006

STAAS & HALSEY LLP

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EXAMINER

HUBER, PAUL W

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/658,796

**Applicant(s)**

PARK ET AL.

**Examiner**

Paul Huber

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                                     |

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The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-10, 15, 18-24 and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (JP-04341939).

Regarding claims 1, 8, 15, 18, 21-24 & 32-34, Takahashi discloses an optical pickup including: a light unit 14 that emits light to record information on and/or reproduce information from a recording medium 13, and detects light reflected from the recording medium 13 so that an information signal and/or an error signal is detected; an objective lens 30 that focuses light emitted from the light unit 14 and positions a light spot on a recording surface of the recording medium 13; and an optical pickup actuator for moving the objective lens 30 in a tracking direction, a focusing direction, and a tilting direction and detecting a relative tilt between the objective lens 30 and the recording medium 13. See figures 1-3, 5, 7 & 8. The optical pickup actuator, comprising: a lens holder 36, on which the objective lens 30 is mounted; and a tilt photodetector 38, which is installed in the lens holder 36 and receives a portion of light used to record information and/or reproduce information from a recording medium 13 according to a relative tilt between the objective lens 30 and the recording medium 13, thereby detecting the relative tilt between the objective lens 30 and the recording medium 13. The tilt photodetector 38 includes two photodetectors 38a & 38b. The relative tilt between the lens 30 and the recording surface is determined by an amplitude of the light received by the two photodetectors 38a & 38b, and a direction of relative tilt between the lens 30 and the recording surface is determined by a difference of the amplitude of the light received by each of the two photodetectors 38a & 38b.

Regarding claims 2, 3, 9, 10, 19 & 20, the lens holder 36 has a stepped through-hole with a stepped portion, i.e., the lens holder 36 has a smaller diameter hole on side of recording medium 13 and a larger diameter hole on side of reflecting mirror 29. The tilt photodetector 38 is installed on the stepped portion of the stepped through-hole

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so that the tilt photodetector 38 is installed at the lower portion of the objective lens 30. Note: the bottom surface of the lens holder 36 to which the photodetector 38 is installed is considered to be a stepped portion of the lens holder 36.

Claims 1, 2, 8, 9, 15, 18, 19, 21-24, 27, 28 and 30-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Murakami et al. (JP-06162540).

Regarding claims 1, 8, 15, 18, 21-24, 27, 28 & 30-34, Murakami et al. discloses an optical pickup including: a light unit that emits light to record information on and/or reproduce information from a recording medium 14, and detects light reflected from the recording medium 14 so that an information signal and/or an error signal is detected; an objective lens 1 that focuses light emitted from the light unit and positions a light spot on a recording surface of the recording medium 14; and an optical pickup actuator for moving the objective lens 1 in a tracking direction, a focusing direction, and a tilting direction and detecting a relative tilt between the objective lens 1 and the recording medium 14. See, for example, figures 1-6. The optical pickup actuator, comprising: a lens holder 2, on which the objective lens 1 is mounted; and a tilt photodetector 13, which is installed in the lens holder 1 and receives a portion of light used to record information and/or reproduce information from a recording medium 14 according to a relative tilt between the objective lens 1 and the recording medium 14, thereby detecting the relative tilt between the objective lens 1 and the recording medium 14. The tilt photodetector 13 includes two photodetectors 13a & 13b. The relative tilt between the lens 1 and the recording surface is determined by an amplitude of the light received by the two photodetectors 13a & 13b, and a direction of relative tilt between the lens 1 and the recording surface is determined by a difference of the amplitude of the light received by each of the two photodetectors 13a & 13b. A magnetic circuit moves the lens 1 and corrects the relative tilt between the lens 1 and the recording surface.

Regarding claims 2, 9 & 19, the tilt photodetector 13 is installed at a lower portion of the objective lens 1, i.e., at a portion of the objective lens 1 lower than the uppermost top portion of the objective lens 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-7, 11-14, 25, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al., as respectively applied to claims 1, 2, 8, 9 and 18 above, in further view of Yanagawa (USP-5,483,512).

Murakami et al. discloses the invention as claimed, but fails to specifically teach that the tilt photodetector further includes at least two more photodetectors, which are disposed in a tangential direction of the recording medium 14 to detect a relative tangential tilt between the recording medium 14 and the objective lens 1, wherein the at least two more tilt photodetectors are disposed on opposing sides of the objective lens 1 in a direction perpendicular to the tilt photodetectors 13a & 13b. Yanagawa discloses an optical pickup comprising a tilt photodetector which includes: two tilt photodetectors D1 & D2 disposed in a radial direction of the recording medium 1 to detect a radial tilt between the recording medium 1 and the optical pickup; and two tilt photodetectors D3 & D4 disposed in a tangential direction of the recording medium 1 to detect a tangential tilt between the recording medium 1 and the optical pickup. See figures 6A-8B. Yanagawa discloses the tilt photodetector, in the same field of endeavor, for the purpose of correcting for both the radial and tangential tilt of the recording medium 1 relative to the optical pickup.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Murakami et al. such that the tilt photodetector further includes two more photodetectors D3 & D4, which are disposed in a tangential direction of the recording medium 14 to detect a relative tangential tilt between the recording medium 14 and the objective lens 1, wherein the two more tilt photodetectors are disposed on opposing sides of the objective lens 1 in a direction perpendicular to the tilt photodetectors 13a & 13b, as taught by Yanagawa. A practitioner in the art would have been motivated to do this for the purpose of further and more accurately correcting for tangential tilt of the recording medium 14 relative to the objective lens 1 using the principles of the Yanagawa invention.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Takahashi or Murakami et al., as separately applied to claim 15 above, in further view of Nagasato (USP-6,259,665).

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Either one of Takahashi or Murakami et al. discloses the invention as claimed, but fails to specifically teach that the light unit includes a single light source, wherein the light emitted is of a red wavelength suitable for a DVD. Nagasato discloses a light unit for use in an optical pickup, the light unit includes a single light source, wherein the light emitted is of a red wavelength suitable for a DVD, in the same field of endeavor, for the purpose of recording and reproducing information from a DVD. See col. 3, lines 31-37, and col. 5, lines 17-25.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify either one of Takahashi or Murakami et al. such that the light unit includes a single light source, wherein the light emitted is of a red wavelength suitable for a DVD, as taught by Nagasato. A practitioner in the art would have been motivated to do this for the purpose of recording and reproducing information from a DVD.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Takahashi or Murakami et al., as separately applied to claim 15 above, in further view of Fujii (USP-6,771,586).

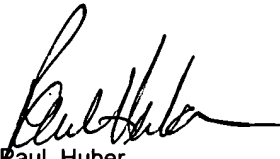
Either one of Takahashi or Murakami et al. discloses the invention as claimed, but fails to specifically teach that the light unit includes two light sources, wherein the light emitted by one of the two light sources is of a red wavelength suitable for a DVD, and the light emitted by the remaining one of the two light sources is of an infrared wavelength suitable for a CD. Fujii discloses a light unit for use in an optical pickup, the light unit including two light sources, wherein the light emitted by one of the two light sources is of a red wavelength suitable for a DVD, and the light emitted by the remaining one of the two light sources is of an infrared wavelength suitable for a CD. Fujii discloses the light unit including the two light sources, in the same field of endeavor, for the purpose of reproducing two different types of recording mediums with a single optical pickup device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify either one of Takahashi or Murakami et al. such that the light unit includes two light sources, wherein the light emitted by one of the two light sources is of a red wavelength suitable for a DVD, and the light emitted by the remaining one of the two light sources is of an infrared wavelength suitable for a CD, as taught by Fujii. A practitioner in the art would have been motivated to do this for the purpose of reproducing two different types of recording mediums with a single optical pickup device.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsuura, Yoo et al., Yabe, Mogi et al. and Matsui each disclose an optical pickup including a tilt sensor.

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Any inquiry concerning this communication should be directed to Paul Huber at telephone number 571-272-7588.



Paul Huber  
Primary Examiner  
Art Unit 2627

pwh  
June 5, 2006